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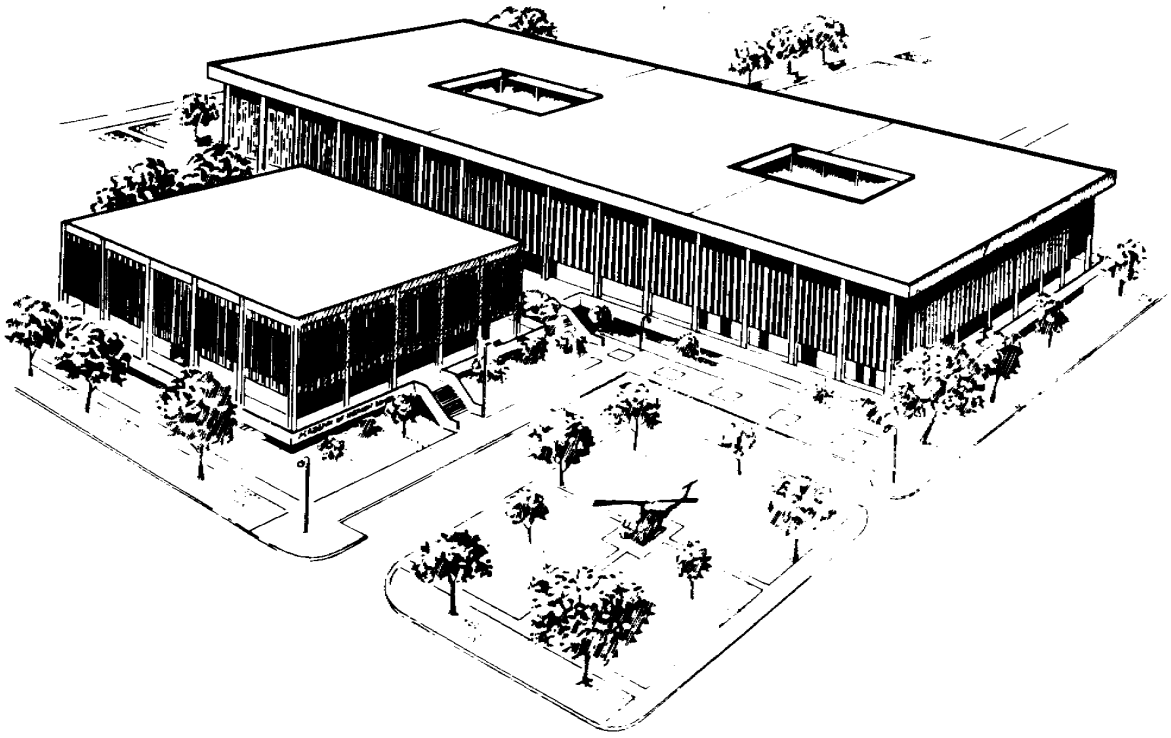
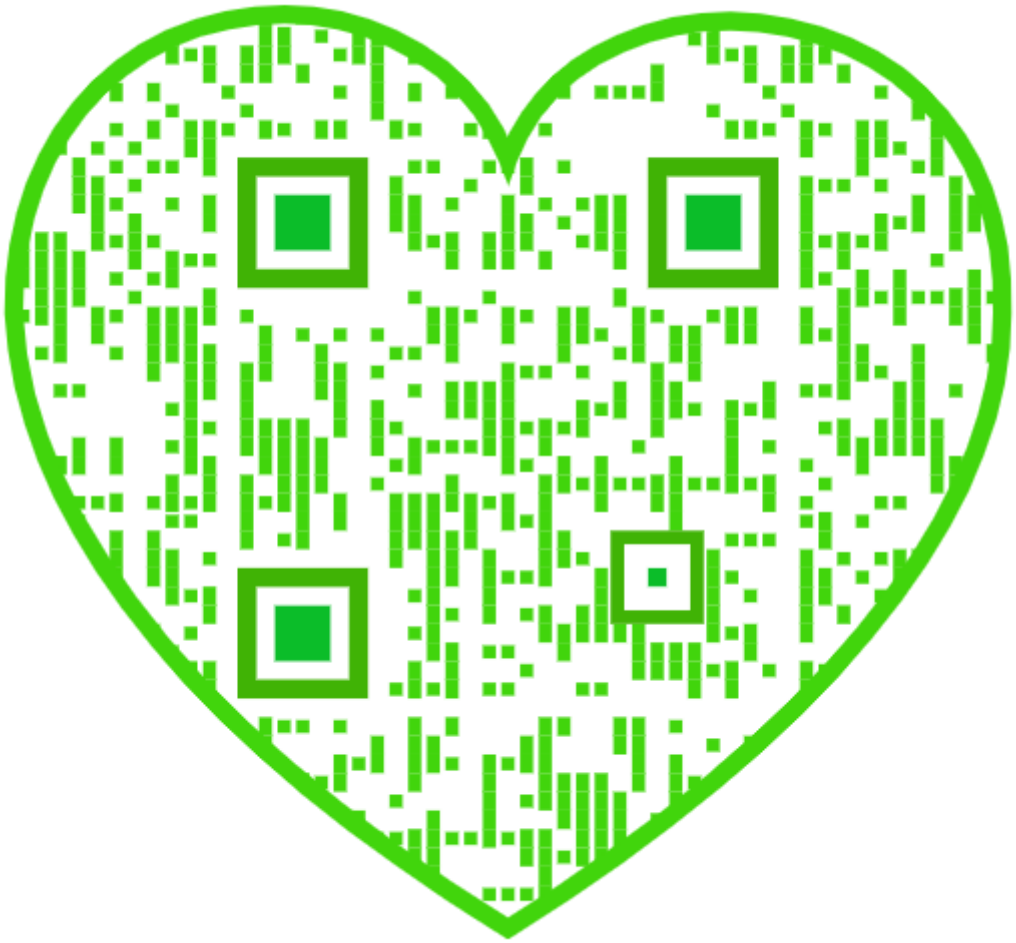


SCRUB, GOWN, AND GLOVE PROCEDURES

SUBCOURSE MD0933 **EDITION 100**



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CORRESPONDENCE COURSE OF
THE U.S. ARMY MEDICAL DEPARTMENT CENTER AND SCHOOL

SUBCOURSE MD0933

SCRUB, GOWN, AND GLOVE PROCEDURES

INTRODUCTION

Before you can begin to perform the duties of a scrub technician, you must perform the surgical scrub and don a sterile gown and gloves. At certain points in the procedure of donning a gown, you and the other "sterile" team members should be assisted by the operating room specialist assigned to circulate or the circulating RN. Whenever you are assigned to scrub for more than one case, you must remove your gown and gloves using special techniques devised to keep you from touching the contaminated side of the gown and gloves.

Study of material in this text will acquaint you with appropriate techniques and procedures for the performance of these tasks. This text is directed primarily to the operating room specialist assigned to scrub, but it also includes instruction concerning the important tasks to be performed by the specialist assigned as the assistant circulator. Because assignments to scrub or to circulate for surgery are made on a rotating basis, you (the operating room specialist) should study all of the text material carefully.

This subcourse consists of one lesson and an examination. The lesson is:

Lesson 1. Scrub, Gown, and Glove Procedures.

Credit Awarded:

Upon successful completion of this subcourse, you will be awarded 4 credit hours.

Materials Furnished:

Materials provided include this booklet, an examination answer sheet, and an envelope. Answer sheets are not provided for individual lessons in this subcourse because you are to grade your own lessons. Exercises and solutions for all lessons are contained in this booklet. *You must furnish a #2 pencil*.

Procedures for Subcourse Completion:

When you have completed the lesson to your satisfaction, fill out the examination answer sheet and mail it to the AMEDDC&S, along with the Student Comment Sheet, in the envelope provided. *Be sure that your social security number is on all correspondence sent to the AMEDDC&S*. You will be notified by return mail of the examination results. Your grade on the examination will be your rating for the subcourse.

Study Suggestions:

Here are some suggestions that may be helpful to you in completing this subcourse:

--Read and study the lesson carefully.

-- After completing the lesson, work the exercises at the end of the lesson, marking your answers in this booklet.

--After completing the lesson exercises, compare your answers with those on the solution sheet, which follows the exercises. If you have answered an exercise incorrectly, check the reference cited after the answer on the solution sheet to determine why your response was not the correct one.

-- When you have completed the lesson, complete the examination. Mark your answers in this booklet; then transfer your responses to the examination answer sheet using a #2 pencil and mail it to the AMEDDC&S for grading.

Student Comment Sheet:

Be sure to provide us with your suggestions and criticisms by filling out the Student Comment Sheet (found at the back of this booklet) and returning it to us with your examination answer sheet. Please review this comment sheet before studying this subcourse. In this way, you will help us to improve the quality of this subcourse.

LESSON ASSIGNMENT

LESSON 1	Scrub, Gown, and Glove Procedures.
LESSON ASSIGNMENT	Paragraphs 1-1 through 1-28.
LESSON OBJECTIVES	After completing this lesson, you should be able to:

1-1. Select safe, effective procedures and techniques for performing a surgical scrub and donning sterile gown and gloves.

1-2. Assist other members of the "sterile" team in donning gown and gloves.

1-3. Select appropriate procedures for removing gown and gloves between cases.

SUGGESTIONS

After completing the assignment, complete the exercises at the end of the lesson. These exercises will help you to achieve the lesson objectives.

If at all possible, practice each procedure discussed in the text, paying particular attention to the techniques described.

LESSON 1

SCRUB, GOWN, AND GLOVE PROCEDURES

Section I. INTRODUCTION

1-1. GENERAL

a. **Discussion**. All members of the sterile team are required to perform a surgical hand scrub and don sterile gown and gloves before touching sterile equipment or the sterile field. The correct performance of these procedures helps protect a patient from infection by preventing pathogenic (disease-producing) microorganisms on the hands, arms, and scrub clothes of "sterile" team members from coming into contact with a patient's wound during an operation. Infection that may result from the introduction of pathogenic microorganisms into a wound could prove fatal to the patient.

(1) The surgical scrub is a systematic washing and scrubbing of the hands and forearms using especially developed techniques and the most effective antibacterial cleaning agent available for such use. This procedure is done to render the hands and arms as free as possible from microorganisms. The skin cannot be sterilized without destruction of tissue, but as many bacteria as possible can be removed by a thorough hand and arm scrub, making the skin surgically clean.

(2) Gown and glove procedures, which are performed following the surgical scrub, involve the donning of sterile surgical gowns and gloves in such a way as to maintain the sterility of the outside of both gown and gloves.

b. **Purpose of the Procedures**. Scrub, gown, and glove procedures are performed to eliminate some of the controllable sources of contamination in the performance of aseptic procedures. The operating room specialist assigned to scrub for an operation should adhere absolutely to the exacting techniques. The specialist must scrub his hands and arms for a prescribed length of time or for a prescribed number of brush-strokes. Such techniques will keep the patient as free from microorganisms as possible. The scrub dons sterile gown and gloves to provide a sterile covering for his clothing and hands.

c. **Handwashing By the Circulating Specialist (Circulator)**. Although the circulator is not required to perform a surgical scrub, he should wash his hands thoroughly between tasks for his own protection and for that of the patient. Handwashing is an important factor in preventing the spread of disease. Nowhere is this procedure more important than in the operating room where the body defenses of the patient are weakened both by the disorder that makes his surgery necessary and by the surgery itself.

d. **Microorganisms Normally Present**. The microorganisms normally present on the skin can be classified as transient and resident.

(1) Transient organisms are those microorganisms that are introduced onto the skin surface by contact with the soil and various other substances. Mechanical scrubbing and surgical soaps will remove most of the bacteria.

(2) Resident organisms are those microorganisms whose natural habitat is the skin. They are comprised mostly of gram-positive and gram-negative bacteria. They exist in large numbers under the fingernails and in the deeper layers of the skin (such as the hair follicles, the sweat glands, the sebaceous glands). Scrubbing removes the resident bacteria from the surface and just beneath the surface of the skin. After a time, the resident organisms in the deeper layers of the skin are brought to the surface by perspiration and the oil secretion of the sebaceous glands and the bacterial count is again increased. For this reason, sterile gloves are worn to prevent contamination of the patient's wound and the sterile goods used in it by organisms from this source.

e. **Local Policy**. The local policy (Standing Operating Procedure (SOP)) is the final authority on the method employed for scrubbing the hands and arms and for the type of surgical detergents to be used; policies vary among hospitals.

1-2. PURPOSE AND SCOPE OF THE SUBCOURSE

a. This subcourse sets forth effective procedures and techniques for scrubbing, gowning, and gloving. In the absence of local policy, the specialist should employ these procedures.

b. To obtain maximum benefit from the ensuing instruction, all procedures should be practiced.

Section II. PREPARATION FOR SCRUBBING

1-3. INTRODUCTION

a. Personal cleanliness is of extreme importance for operating room personnel. A daily shower, frequent shampoos, and attention to hands and fingernails are most important. Because of the close contact with other members of the "sterile" team, personnel should also use a body deodorant. They should note and report to the operating room supervisor any infection, rash, or open lesion about the hands, nails, and arms. They should also report any signs of a cold or other systemic infection.

b. The specialist must make specific preparation before he begins to scrub. Such preparation, which is necessary to further eliminate factors of contamination, is discussed in paragraphs 1-4 through 1-9.

c. For the specialist to perform the scrub most effectively, certain features and equipment should be available in the scrub rooms within the surgical suite (see paragraph 1-10).

1-4. FINGERNAILS

The specialist should keep his fingernails short enough so that they are not visible over the tips of the fingers. Short nails are easy to clean and, if kept smooth, will not puncture gloves. Nails should be free of polish.

1-5. JEWELRY

The specialist is to remove all jewelry from his hands and arms. He may pin these items in a pocket of his scrub suit. Bacteria and dead skin cells accumulate beneath watches, bracelets, and rings.

1-6. SCRUB SUIT

a. The specialist is to don a clean, short-sleeved cotton scrub suit each day before entering the semi-restricted/restricted areas of the surgical suite. Street clothes or hospital uniforms are never worn in these areas. The scrub suit should cover all other clothing such as undergarments. The scrub shirt must be tucked into the trousers to avoid contamination by the shirt tail flapping on a sterile field. The trouser legs should not touch the floor as this may transport bacteria from one place to another.

b. The specialist assigned to scrub should adjust the sleeves of his scrub suit to at least four inches above his elbows.

1-7. SHOES

a. Ideally, the specialist should keep a pair of shoes for wear in the surgical suite only and he should keep these shoes clean. Shoe soles are a source of gross contamination and of cross infection from one area of the hospital to another.

b. Street shoes (military low-quarters and/or nursing white shoes) are never worn in the restricted areas of the surgical suite unless shoe covers are placed over them. Shoe covers should be worn on a single-use basis. They must be removed on leaving the restricted area and a fresh pair put on before reentrance to that area.

c. Local policy governs the wearing of the scrub suit shoes and shoe covers.

1-8. SURGICAL CAP

The specialist is to wear a clean head cover each day; most hospitals use disposable hoods and caps. He should wear it in a manner to cover the hair completely (see Figure 1-1). The wearing of the cap prevents the possible contamination of the sterile field by falling hair or dandruff.

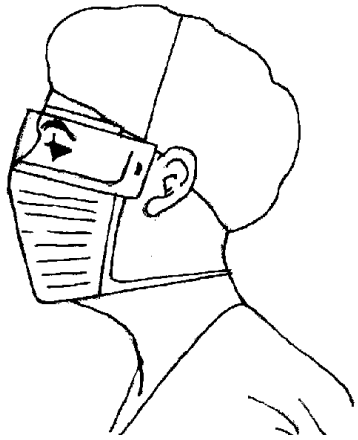

Figure 1-1. Surgical cap and mask (disposable type).

1-9. SURGICAL MASK

a. The surgical mask is worn primarily to protect the patient from bacteria exhaled from the oro- and nasopharynx of operating room personnel. Two types of disposable masks that are standard items are, one with paired head and neck ties (see Figure 1-1) and a cup type with an elastic headband (see Figure 1-2). Both are made of a nonwoven fabric with adjustable metal nosepieces along the top of the mask. The metal stay is used to hold the mask snugly to the face, thus preventing fogging of the specialist's glasses if worn. The mask must fit snugly around the nose and mouth to filter air through it rather than permit the passage of air around the sides. The specialist is to don a fresh mask immediately before beginning the scrub procedure. The mask is not considered sterile.

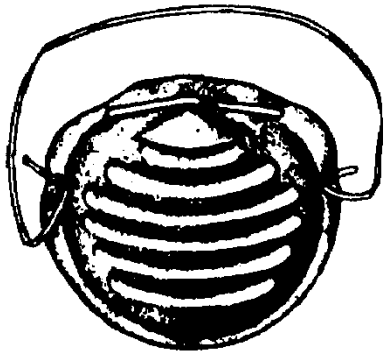

Figure 1-2. Disposable surgical mask with elastic headband.

b. After the mask has become damp, droplets from the nose and mouth can easily pass through it--the mask no longer serves as a barrier to germs. Therefore, the mask should be changed after each procedure and more often if it has become damp.

c. The specialist should never allow the mask to dangle around his neck. He should never place the mask in his pocket or on a clean surface and he should not handle it except by the ties and/or elastic headband after it is removed. Careful handling of a soiled mask prevents the spread of microorganisms throughout the surgical suite.

d. When removing the mask, the specialist should handle it by the ties and/or elastic headband and should immediately place it in the designated receptacle. As soon as he removes a soiled mask, the specialist should wash his hands.

1-10. SCRUB ROOMS

a. A scrub area should be situated between each two operating rooms and should open directly into an operating room. The sinks should be deep enough, at least one foot, so that water will not be splashed onto the scrub clothes, the floor, or the hands and arms during the procedure (see Figure 1-3). The sinks should be provided with hot and cold water faucets which should be controlled by knee levers or by foot levers. If arm or hand levers must be used, these controls must be adjusted for water temperature flow before starting to scrub. If the specialist's hands or arms accidentally touch the faucets or the sink during any phase after the scrub has begun, he has become contaminated and must begin the scrubbing cycle again. Running water is preferred because it completely and easily rinses away suds containing bacteria.

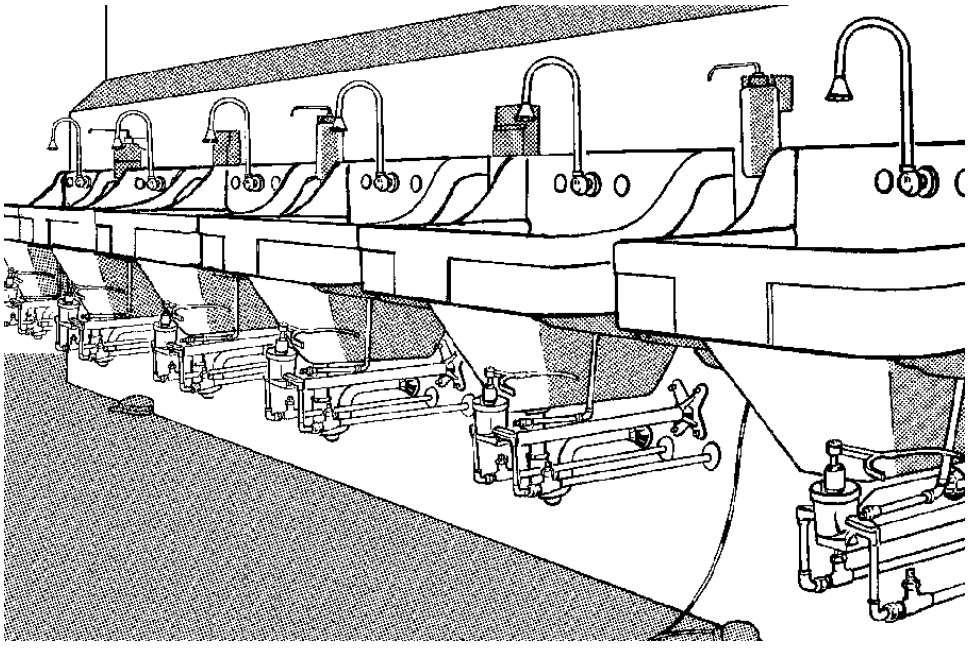

Figure 1-3. Scrub unit sinks with dispensers.

b. Containers for surgical detergents are placed between each two sinks. Foot-operated pedals attached to the containers provide a convenient method of dispensing detergents without contaminating the hands. Scrub brushes (depending on the type used) may be placed in dispensers, one between each two sinks. A clock should be provided for timing the scrub procedure when required.

Section III. CLEANSING AGENTS IN USE

1-11. INTRODUCTION

A number of surgical soaps are available for use in Army hospitals. Scrub brushes are also used. A surgical scrub brush/sponge with a nail cleaner are prepackaged, presterilized, and may be impregnated with a surgical soap. The brush is disposable and for one time use only.

1-12. SURGICAL SOAPS

a. **Standard Agents**. The surgical soaps available as a standard item are Povidone-iodine and Hibiclens®. These soaps are used in a concentrated liquid form in soap dispensers or in brushes impregnated with these detergents.

b. **Desirable Properties**. These agents are preferable for doing the surgical scrub because:

(1) They are nonirritating to most people.

(2) They leave a minimum number of microorganisms on the skin.

(3) They have a prolonged anti-bacterial effect on the skin when used regularly. Surgical detergents leave a film on the skin which keeps the resident bacteria to a minimum and yet they do not interfere with the skin's natural resistance to transient bacteria (refer to paragraphs 1-1d(1) and (2)).

(4) They will lather in either hot, cold, or hard water.

(5) The amount of detergent needed for a scrub is small (about 8 ml). Adding more water produces more lather.

1-13. ALTERNATIVES IN THE FIELD

a. Povidone-iodine and Hibiclens are two types of surgical soaps that are available as standard items. These soaps are in liquid form.

b. When surgical soaps are not available, the surgical scrub should be performed according to local standard policy.

Section IV. THE SURGICAL SCRUB

1-14. INTRODUCTION

a. **Requirements for Performance of a Complete Scrub**. The specialist is to perform a scrub in the following instances:

(1) Before the first case in the morning.

(2) Between cases.

b. **Methods**. As local policy prescribes, the specialist will scrub by one of the following methods:

(1) Time method. Using a clock or some other timing device to measure brushing time, the length of the scrub varies from one institution to another. This method has been most frequently used in the past.

(2) Brush-stroke method. A prescribed number of brush-strokes, applied lengthwise of the brush or sponge, is used for each surface of the fingers, hands, and arms.

1-15. PRINCIPLES

The specialist should follow certain principles when performing the surgical scrub (see Table 1-1).

Rinsing time	Is not to be included in the total scrub time if the timed method is to be used.
Unsterile objects	Should not be touched once the scrub procedure has begun.
Entire scrub procedure	Must be repeated if an unsterile object is touched.
Same scrub procedure	Should be utilized for every scrub, whether it is the first or last one of the day.
Local policy	May specify the time lengths and brush strokes for scrub procedures between cases.

Table 1-1. Surgical scrub principles.

1-16. PROCEDURE

a. Both surgical scrub methods follow an anatomical pattern of scrub. One should think of the fingers, hands, and arms as having four sides or surfaces. If properly executed, both methods are effective and each exposes all surfaces of the hands and forearms to mechanical cleaning and chemical antisepsis.

b. In the following paragraphs, the brush-stroke method is described, using a disposable, prepackaged, presterilized sponge/brush, impregnated with a surgical detergent.

(1) Regulate the flow and temperature of the water.

(2) Pretear package containing brush (see Figure 1-4); lay the brush on the back of the scrub sink.

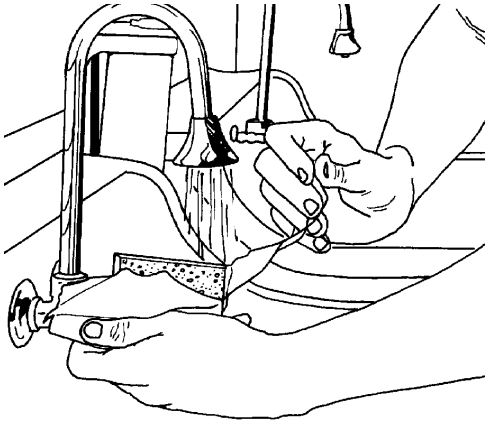

Figure 1-4. Pretear package containing brush after regulating flow and temperature of water.

(3) Wet hands and arms (see Figure 1-5) for an initial prescrub wash. Use several drops of surgical detergent, work up a heavy lather, then wash the hands and arms to a point about two inches above the elbow.

(4) Rinse hands and arms thoroughly, allowing the water to run from the hands to the elbows (see Figure 1-6). Do not retrace or shake the hands and arms; let the water drip from them.

(5) Remove the sterile brush and file, moisten brush and work up a lather. Soap fingertips and clean the spaces under the fingernails of both hands under running water (see Figure 1-7); discard file.

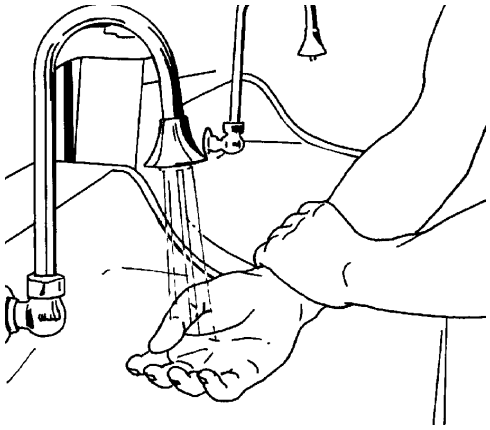

Figure 1-5. Wet hands and forearms for an initial pre-scrub wash with several drops of surgical detergent.

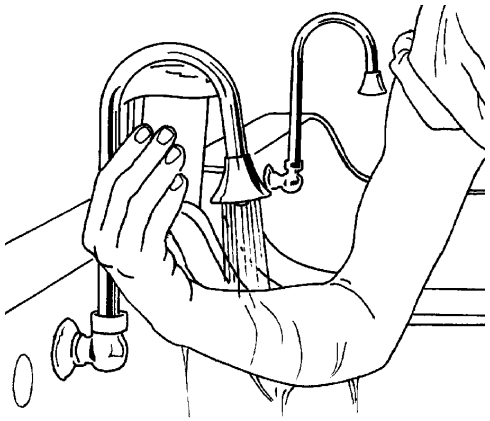

Figure 1-6. Rinse hands and arms thoroughly, allowing water to run from the hands to the elbows.

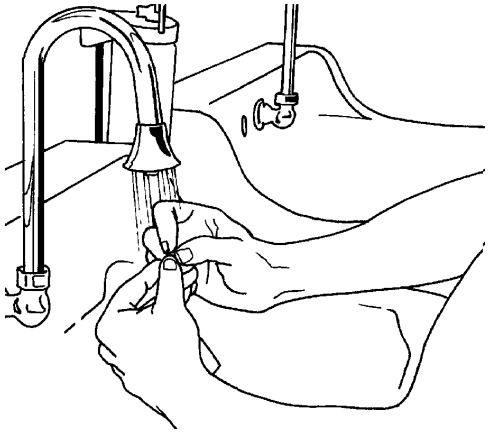

Figure 1-7. Cleaning the fingernails. Note that the nail being cleaned is held directly under the running water.

(6) Lather fingertips with sponge-side of brush; then, using bristle side of brush, scrub the spaces under the fingernails of the right or left hand 30 circular strokes (see Figure 1-8). **When scrubbing, slightly bend forward, hold hands and arms above the elbow, and keep arms away from the body.**

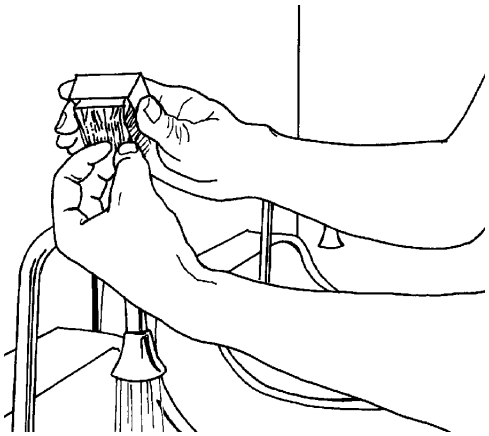

Figure 1-8. Scrubbing fingernails and space under fingernails for 30 circular strokes.

(7) Lather digits (see Figure 1-9); scrub 20 circular strokes on all four sides of each finger. You may begin with the thumb or little finger (see Figure 1-10) or the right or left hand. **Scrub one hand and arm completely before moving on to the other hand and arm.**

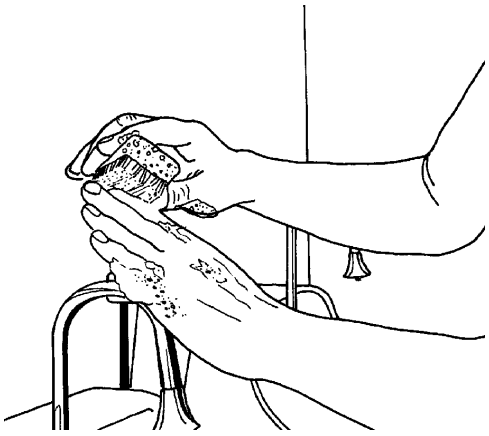

Figure 1-9. Scrubbing all sides of the fingers.

(8) Lather palm, back of hand, heel of hand, and space between thumb and index finger. Choosing either of the surfaces, scrub 20 circular strokes on each surface.

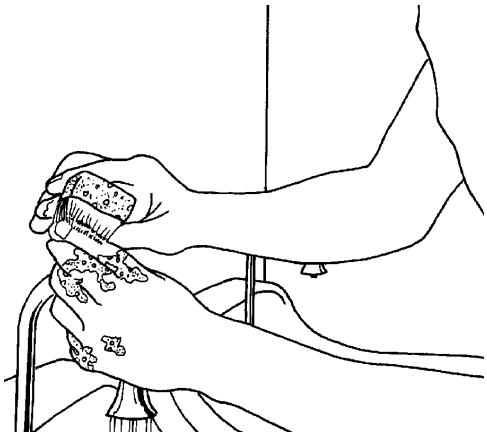

Figure 1-10. After soaping digits, scrub, beginning with the thumb or little finger of the right or left hand.

(9) You are now ready to scrub the forearm. Divide your arm in three inch increments. The brush should be approximately three inches lengthwise. Use the sponge-side of the brush lengthwise to apply soap around wrist. Scrub 20 circular strokes on all four sides; move up the forearm--lather, then scrub, ending two inches above the elbow.

(10) Soap and/or water may be added to the brush at any time

(11) Repeat steps (6) through (9) above for the other arm.

(12) Discard brush.

(13) Rinse hands and arms without retracing and/or contaminating.

(14) Allow the water to drip from your elbows before entering the operating room.

(15) Slightly bend forward, pick up the hand towel from the top of the gown pack and step back from the table (see Figure 1-11). Grasp the towel and open it so that it is folded to double thickness lengthwise. Do not allow the towel to touch any unsterile object or unsterile parts of your body. Hold your hands and arms above your elbow, and keep your arms away from your body.

(16) Holding one end of the towel with one of your hands, dry your other hand and arm with a blotting, rotating motion (see Figure 1-12). Work from your fingertips to the elbow; DO NOT retrace any area. Dry all sides of the fingers, the forearm, and the arms thoroughly (see Figures 1-13 and 1-14). If moisture is left on your fingers and hands, donning the surgical gloves will be difficult. Moisture left on the arms may seep through surgical cloth gowns, thus contaminating them.

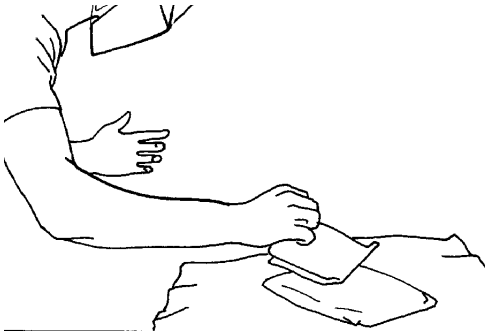

Figure 1-11. Picking up folded hand towel.

Figure 1-12. Drying by using a blotting, rotating motion, start with the fingers.

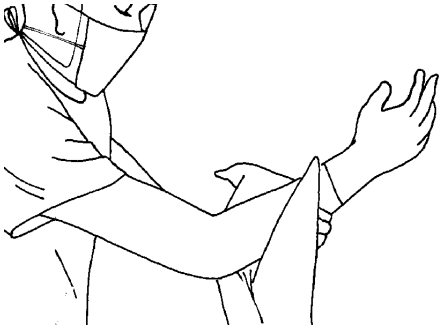

Figure 1-13. Drying the forearm.

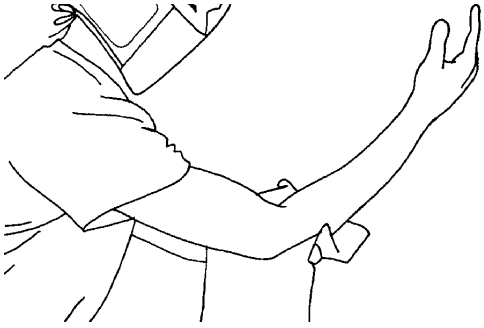

Figure 1-14. Drying the elbow. Note that the towel remains folded to double thickness.

(17) Grasp the other end of the towel and dry your other hand and arm in the same manner as above. Discard the towel into a linen receptacle (the circulator may take it from the distal end).

Section V. SURGICAL GOWN TECHNIQUE

1-17. PRINCIPLES

The specialist is to abide by the following principles whenever he dons a sterile gown:

a. If the specialist touches the outside of his gown while donning it, the gown is contaminated. If this occurs, discard the gown. The specialist is to touch only the inside of the gown while putting it on.

NOTE: Surgical gowns are folded with the inside facing the specialist. This method of folding facilitates picking up and donning the gown without touching the outside surface.

b. The specialist's scrubbed hands and arms are contaminated if he allows them to fall below waist level or to touch his body. The specialist, therefore, keeps his hands and arms above his waist and away from his body and at an angle of about 20 to 30 degrees above the elbows.

c. After donning the surgical gown, the only parts of the gown that are considered sterile are the sleeves (except for the axillary area) and the front from waist level to a few inches below the neck opening. If the gown is touched or brushed by an unsterile object, the gown is then considered contaminated. The contaminated gown is removed using the proper technique. You must then don a new sterile gown.

1-18. PROCEDURE--CLOSED CUFF METHOD

a. With one hand, pick up the entire folded gown from the wrapper by grasping the gown through all layers, being careful to touch only the inside top layer, which is exposed (see Figure 1-15). Step back from the table to allow other team members room to maneuver.

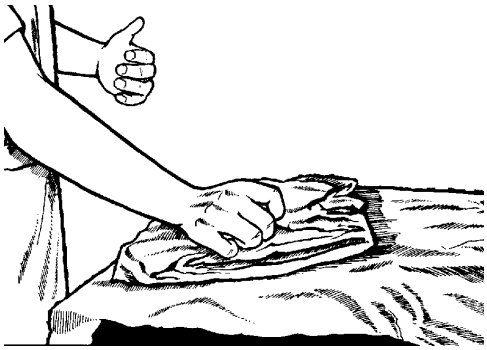

Figure 1-15. Grasp the gown through all layers.

b. Hold the gown in the manner shown in Figure 1-16, near the gown's neck, and allow it to unfold, being careful that it does not touch either your body or other unsterile objects.

Figure 1-16. Unfold the gown. Note that the specialist holds the gown away from him and at chest level to facilitate handling and without contaminating the gown. Also, no unsterile equipment is near.

c. Grasp the inside shoulder seams and open the gown with the armholes facing you.

d. Slide your arms part way into the sleeves of the gown, keeping your hands at shoulder level away from the body (see Figure 1-17).

Figure 1-17. Slide hands and arms part way into the sleeves. Note that hands are held high so gown does not touch the floor. Do not permit the outside surface of the gown to brush the skin.

e. With the assistance of your circulator, slide your arms further into the gown sleeves; when your fingertips are even with the proximal edge of the cuff, grasp the inside seam at the juncture of gown sleeve and cuff using your thumb and index finger. Be careful that no part of your hand protrudes from the sleeve cuff (see Figure 1-18).

Figure 1-18. Slide the arms the full distance that they should be inserted into the gown sleeves. The specialist should grasp the inside seam where the gown and cuff join. Note that no part of his hands is protruding from the cuffs.

f. The circulator must continue to assist at this point. He positions the gown over your shoulders (see Figure 1-19) by grasping the inside surface of the gown at the shoulder seams.

Figure 1-19. **1** The circulator adjusts the gown over the scrub's shoulders.
2 The circulator adjusts the gown over the scrub's shoulders. Note that the circulator's hands and arms are in contact with only the inside surface of the gown.

NOTE: For the reusable cloth gown (which is rarely used), use the procedures given in **steps a through f**. The circulator then prepares to tie the gown. The neck and back ties are tied in an up-and-down motion. He then ties the belt by grasping the gown at the back as the scrub leans forward. The circulator leans down and grasps the distal end of one belt tie; this enables the circulator to handle the belt without touching any part of the gown that should remain sterile. The circulator then brings the belt tie to the back of the gown. The scrub then swings toward the opposite side so that the circulator can grasp the other belt in the same manner. The circulator will then tie the belt in an up-and-down motion; this reduces the area of contamination on the gown. The circulator will then tuck the ends of the belt inside the gown at the back. Then the scrub; proceeds to the gloving procedure.

g. The circulator then prepares to secure the gown. The neck and back may be secured with a Velcro® tab or ties (see Figure 1-20). The circulator then ties the gown at waist level at the back. This technique prevents the contaminated surfaces at the back of the gown from coming into contact with the front of the gown.

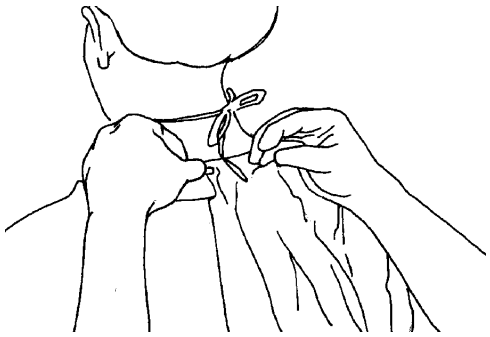

Figure 1-20. The circulator secures the gown at the neck with the Velcro® tab.

1-19. PROCEDURE--OPEN CUFF METHOD

The procedure is the same as that for the closed cuff method with the exception of the steps described in paragraph 1-18e and in Figures 1-18 and 1-19.

a. Do not grasp the inside seam of the sleeve as described in paragraph 1-18e and shown in Figure 1-19. Allow your hands to protrude from the cuffs of the gown.

b. The circulator reaches inside the gown sleeves at the shoulder seams and pulls the gown over your shoulders and the cuffs over your hands instead of performing this step of the procedure as described in paragraph 1-18f and Figure 1-19. Both you and the circulator must be careful that the gown cuffs are not pulled too high on the wrists. The edge of the cuff should be at the distal end of the wrist.

NOTE: The scrub **will proceed** to the Glove Technique **before** completing final tie of gown.

Section VI. SURGICAL GLOVE TECHNIQUE

1-20. INTRODUCTION

a. Gloves are packaged so that the scrub may don his gloves without contaminating the glove's outer surfaces. A pair of gloves are packaged in an individual sterile wrapper.

b. While the specialist is wearing his sterile gown and gloves, he must take particular care to avoid contaminating these sterile garments because such contamination could possibly result in the transfer of pathogenic microorganisms to the patient's wound. The specialist should therefore observe certain rules, to include the rules outlined Table 1-2.

NEVER	drop his hands below the level of the sterile area at which he is working.
NEVER	touch his surgical gown above the level of the axillary or below the level of the sterile area where he is working.
NEVER	put his hands behind his back; he must keep them within his full view at all times.
NEVER	tuck his gloved hands under his armpits, as the axillary region of his gown is contaminated.
NEVER	reach across an unsterile area for an item.
NEVER	touch an unsterile object with gloved hands unless ordered to do so by the surgeon.

Table 1-2. Rules to observe while wearing sterile gown and gloves.

NOTE: The surgeon will not give such an order as to allow someone to touch an unsterile object with gloved hands unless a dire emergency exists (such as cardiac arrest) when the **time element is of paramount importance in saving the patient's life.**

NOTE: If the scrub contaminates his gown and gloves in any of the ways just mentioned in Table 1-2, he needs to discard and replace his gown and gloves.

1-21. CLOSED CUFF METHOD

a. **Discussion**. The closed cuff method of gloving is preferable to the open cuff method when the specialist must glove himself. The closed cuff method eliminates potential hazards in the glove procedure as follows:

(1) The danger of contamination of gloves caused by the glove cuffs rolling on skin is eliminated because the skin surface is not exposed.

(2) The gown cuffs can be anchored securely by the gloves without the danger of contamination that exists when gloves are donned by the open cuff method.

b. **Procedure.**

(1) Take a tuck in each gown cuff if the cuffs are loose. Make the tuck by manipulating the fingers inside the gown sleeve; do not expose the bare hands while tucking the gown cuffs.

(2) The circulator opens the outer wrapper of the glove package and flips them onto the sterile field.

(3) Open the inner package containing the gloves and pick up one glove by the folded cuff edge with the sleeve-covered hand (see Figure 1-21).

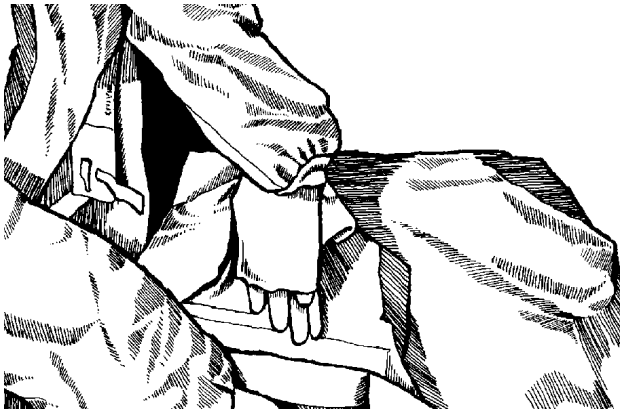

Figure 1-21. Picking up a glove by its folded cuff edge with a sleeve-covered hand. Note that gloves are packaged with a wide folded cuff so the specialist can don the gloves without touching the outside surfaces with his bare fingers.

NOTE: The scrub should don the first glove in accordance with the hand he uses most of the time, i.e., a right-handed specialist can perform the closed cuff gloving procedure more quickly and efficiently by putting on the left glove first. A left-handed specialist will facilitate the procedure for himself by putting on the right glove first.

(4) Place the glove on the opposite gown sleeve, palm down, with the glove fingers pointing toward your shoulder (see Figure 1-22). The palm of your hand inside the gown sleeve must be facing upward toward the palm of the glove.

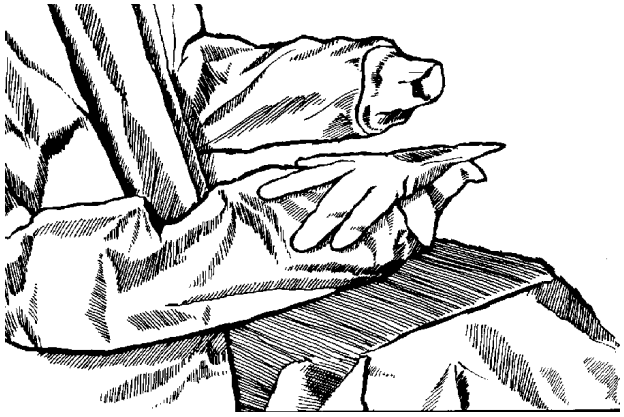

Figure 1-22. Placing the glove on the opposite sleeve. Note that no part of either hand is visible through the gown cuff.

(5) Place the glove's rolled cuff edge at the seam that connects the sleeve to the gown cuff (see Figure 1-23). Grasp the bottom rolled cuff edge of the glove with your thumb and index finger.

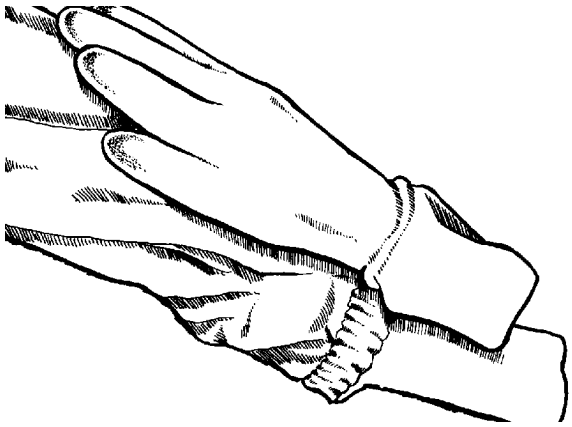

Figure 1-23. Positioning the glove on the gown sleeve. Note that the rolled edge of the glove cuff is at the juncture of the gown cuff and sleeve. Note also the pinched place on the gown sleeve indicating the point at which the specialist has grasped the cuff of the glove between his thumb and index finger.

(6) While holding the glove's cuff edge with one hand, grasp the uppermost edge of the glove's cuff with the opposite hand (see Figure 1-24). Take care not to expose the bare fingers while doing this.

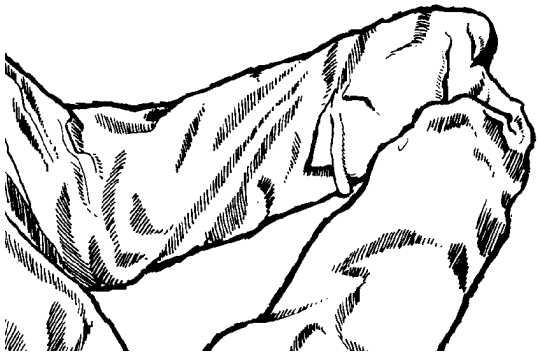

Figure 1-24. This is the correct method of grasping the glove's cuff edge from above and below.

(7) Continuing to grasp the glove (see Figure 1-24); stretch the cuff of the glove over the hand (see Figure 1-25).

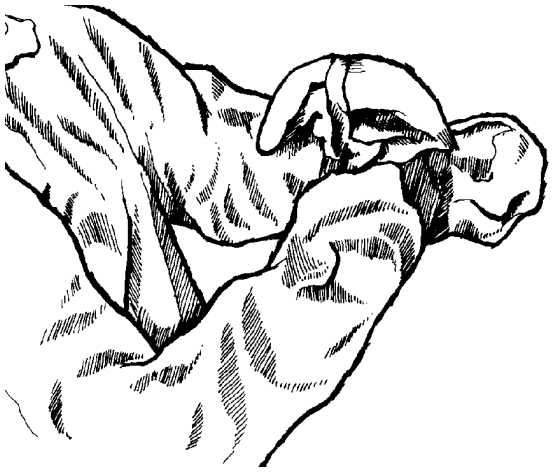

Figure 1-25. Stretching the glove's cuff over the hand.

(8) Using the opposite sleeve- covered hand, grasp both the glove cuff and sleeve cuff seam and pull the glove onto the hand (see Figure 1-26). Pull any excessive amount of gown sleeve from underneath the cuff of the glove.

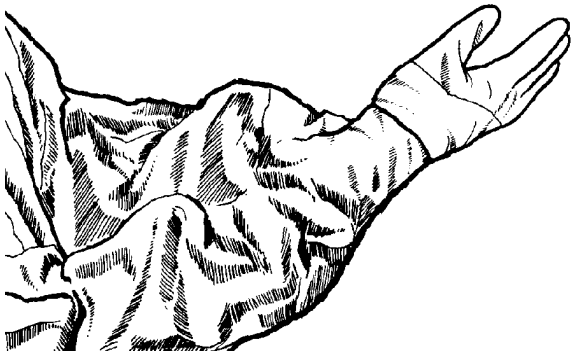

Figure 1-26. Pulling the glove onto the hand.

(9) Using the hand that is now gloved, put on the second glove in the same manner. When gloving is completed, no part of the skin has touched the outside surface of the gloves. Check to make sure that each gown cuff is secured and covered completely by the cuff of the glove (see Figure 1-27). Adjust the fingers of the glove as necessary so that they fit snugly.

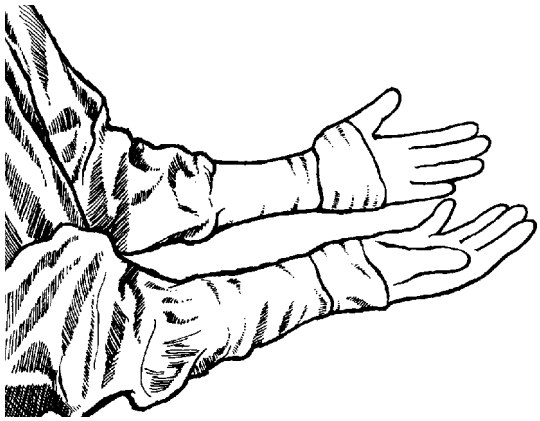

Figure 1-27. Note that the gown cuffs are completely covered and are secured by the cuffs of the gloves.

Section VII. FINAL TIE OF GOWN

1-22. INTRODUCTION

Now that the gloves are on, the team member is ready to complete gown tie with assistance of the circulator. The powder from the gloves is washed off before the gown's waist tie is tied and final adjustment is made in accordance with local SOP.

1-23. PROCEDURE

a. The scrub will take hold of the paper tab that holds the belt and belt tie located at waist level (see Figure 1-28) and pull the tab away from the belt tie.

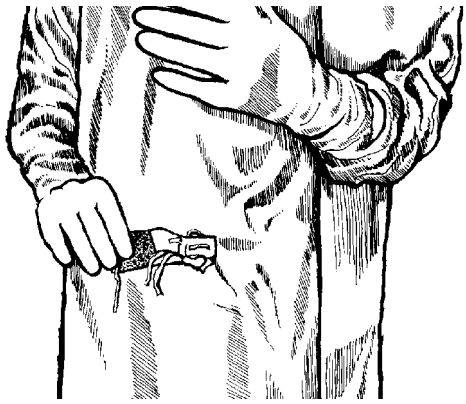

Figure 1-28. Scrub takes hold of paper tab.

b. The scrub will pass the paper tab that holds the belt to the circulator (see Figure 1-29).

Figure 1-29. Scrub passes paper tab.

c. The circulator will take hold of the paper tab, being very careful not to touch the belt, and will move to the side or behind the scrub (see Figure 1-30).

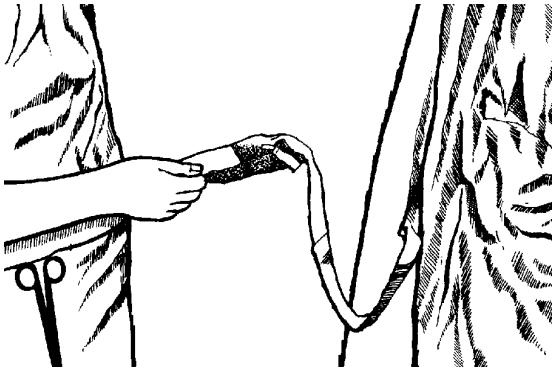

Figure 1-30. Circulator takes hold of paper tab and moves to the side or behind the scrub.

d. When the circulator is properly positioned (to the side or behind the scrub), the scrub will then take hold of the belt only being careful not to touch the paper tab and pull on the belt leaving the circulator with only the paper tab in his hand (see Figure 1-31).

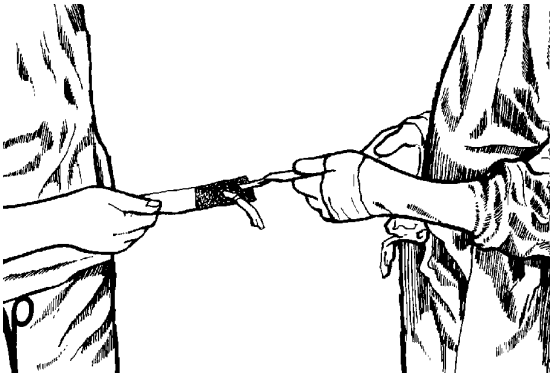

Figure 1-31. Scrub takes hold of belt.

NOTE: The circulator must hold on tight to the paper tab so that when the scrub pulls on the belt the tab doesn't come with the belt and contaminates the scrub.

e. Now the scrub will take hold of the belt tie that is at waist level and tie the belt to it (see Figures 1-32 and 1-33).

Figure 1-32. Scrub holds belt tie.

Figure 1-33. Scrub ties the belt.

1-24. ADJUSTMENT OF GOWN

Now that the gloves are on and final tie of the gown is done, the circulator completes his adjustment of the gown by stooping down, grasping the outside of the side seams at the bottom of the gown, and gently pulling down (see Figure 1-34) in accordance with local SOP.

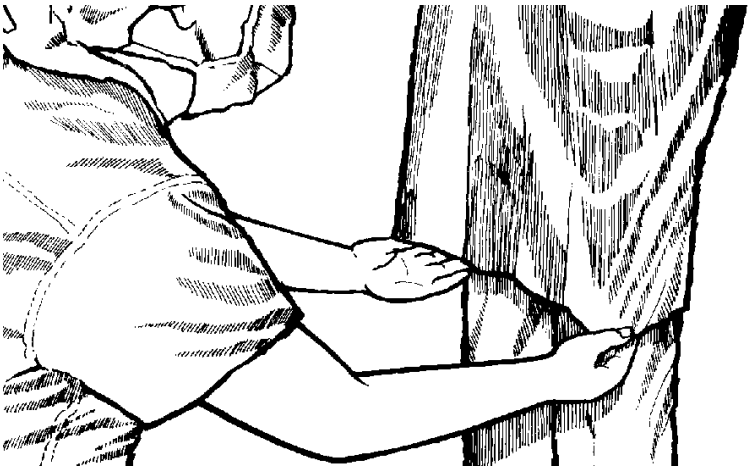

Figure 1-34. The circulator adjusts the scrub's gown for length. Note that the circulator grasps and tugs the gown seams at the hem of the gown. He may hold the gown by the outside surface because the bottom of the gown is considered contaminated.

Section VIII. GOWNING AND GLOVING ANOTHER TEAM MEMBER

1-25. INTRODUCTION

After having donned his own sterile gown and gloves, the scrub will assist other members of the sterile team into their gowns and gloves. Other members of the "sterile" team include the surgeon and his medical officer assistants, as well as other operating room specialists assigned to scrub.

1-26. PROCEDURE

a. Unfold a towel so that it is folded in half lengthwise and hand it to the scrubbed team member. While he is drying his hands, unfold his gown. Grasp the gown near the neckband using the thumb and index finger of each hand and roll the gown so that the outside surface is over (protecting) your gloved hands (see Figure 1-35). The arm holes of the gown are facing the team member being gowned. Offer the inside of the gown to the scrubbed team member and allow him to slip his arms into the gown sleeves (see Figure 1-35).

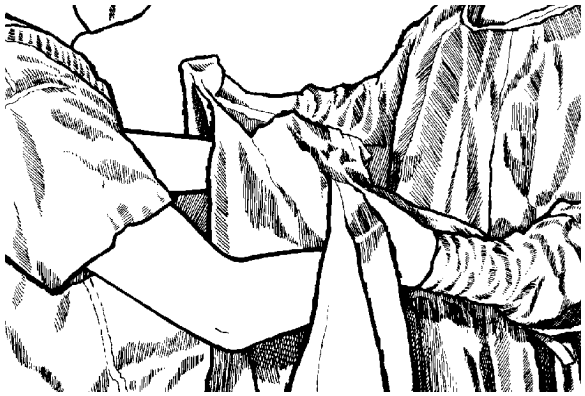

Figure 1-35. The scrub holds a gown for a scrubbed team member. Note that the scrub's gloved hands are protected by the outside of the gown. The scrub holds the gown securely while the scrubbed team member slips his arms into the gown.

b. The scrub pulls the gown over the team member's shoulders (see Figure 1-36). The circulator then secures the neck of the gown and ties the inside waist tie.

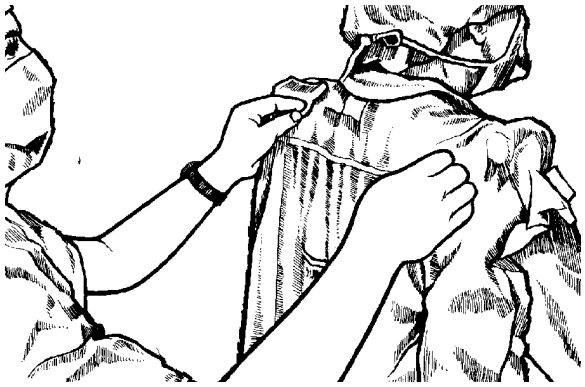

Figure 1-36. The circulator adjusts the gown over the sterile team member's shoulders and secures the neck with the Velcro® tab and ties the belt at waist level. Note that the circulator's hands are inside the gown.

c. Grasp the right glove firmly at waist level. Keeping your thumbs extended and covered by the glove cuff, stretch the cuff so that he can introduce his hand without touching your gloves (see Figure 1-37). While you are stretching the glove open, stand with one foot forward and one foot to the rear (see Figure 1-38). This stance will help you from being thrown off balance. (DO NOT snap the glove; bring it upward gently over the cuff of the gown.)

NOTE: Always offer the right glove first. Be careful that you do not get thrown off balance while the other team member introduces his hand into the glove (see Figure 1-38).

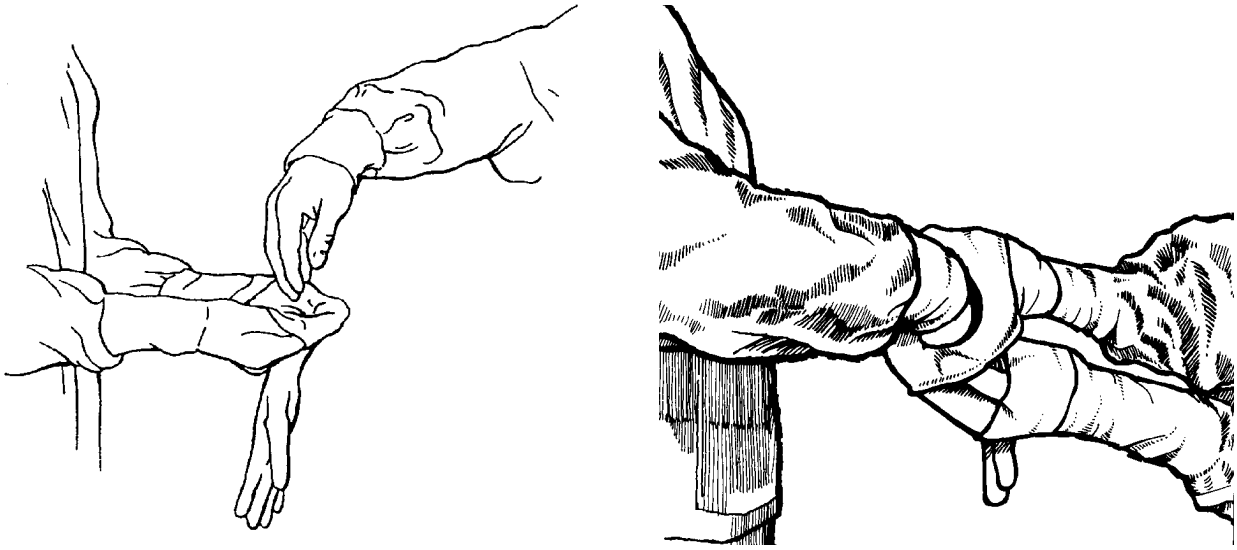

Figure 1-37. **1** Assisting the team member in donning the first glove. Note that the scrub has spread the cuff wide to permit the team member to introduce his hand without touching the scrub's gloves.

2 Note also that the scrub protects his gloved fingers by holding them beneath the cuff of the glove, and his thumbs by holding them away from the partly-gloved hand.

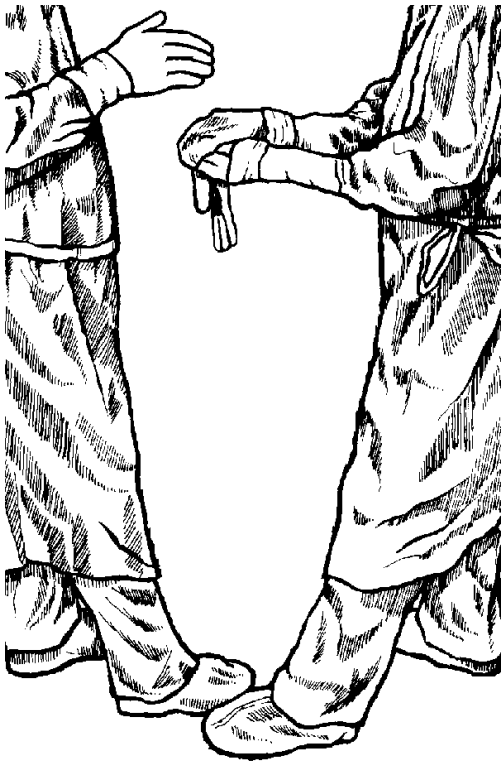

Figure 1-38. Assisting the team member in donning the gloves. NOTE the positioning of the feet.

d. Repeat the technique described in paragraph c above for the left hand. The team member can assist with donning this glove (see Figure 1-39). Give the team member a moistened saline sponge so that he can remove excess powder from his gloves if the gloves are powdered.

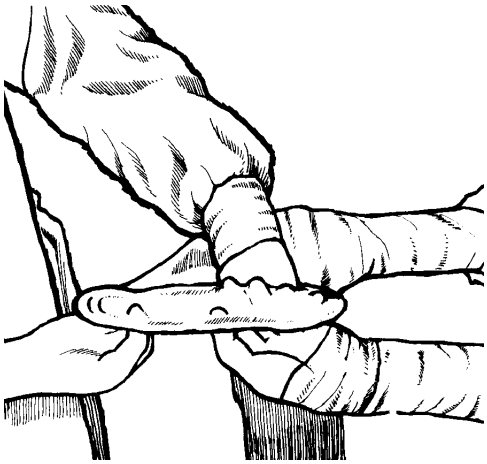

Figure 1-39. Assisting with the second glove. The scrubbed team member provides assistance in donning this glove by holding the cuff of the glove with his gloved hand.

NOTE: The scrub should remove the powder from his gloves again.

e. The circulator will readjust the neck fastener if needed and assist scrubbed team member with tying the outside waist tie of the gown. After the tie is secured, the gown is adjusted at the bottom (see Figure 1-34). Figure 1-40 shows a gloved and gowned team member.

Figure 1-40. Gloved and gowned team member.

Section IX. REMOVING THE GOWN AND GLOVES BETWEEN CASES

1-27. INTRODUCTION

a. After a surgical case, the outer part of the gown and gloves are considered contaminated by bacteria from the procedure. The scrub must remove them being very careful to avoid contamination of his forearms, clothing, and hands.

b. Remove the gloves after removing the gown.

c. Follow local policy for removing the gown and gloves when they become contaminated during a surgical procedure.

1-28. PROCEDURE

a. After the circulator unties the neck and back ties, the team members perform the following procedure by themselves. Grasp the gown at the shoulders and pull the gown forward and down over the arms and gloved hands.

b. Holding the arms away from the body (see Figure 1-41), fold the gown so that the outside of the gown is folded in (see Figure 1-42); discard it into the linen hamper.

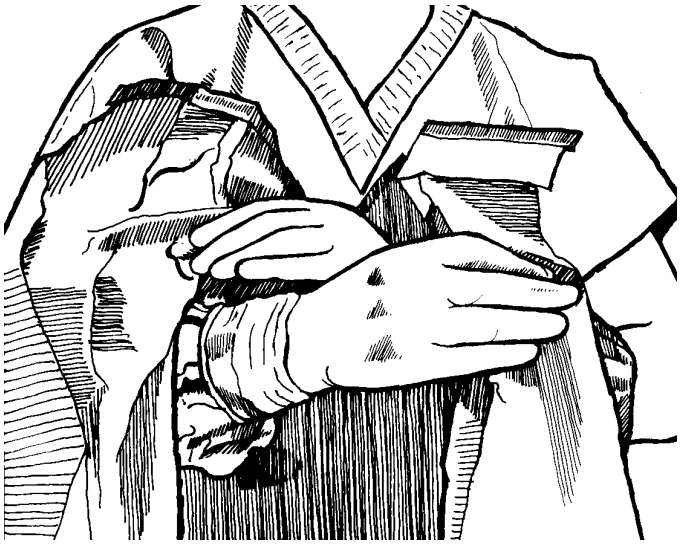

Figure 1-41. Note that the specialist pulls the gown away from him while removing it.

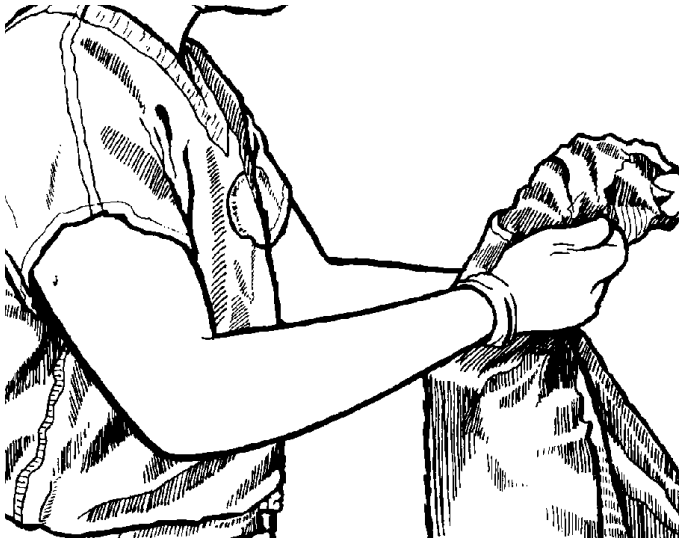

Figure 1-42. Folding the gown so that its inside surface faces the specialist. Note that he continues to hold the gown at arm's length.

c. Grasp the outer surface of one glove with the other gloved hand "rubber to rubber" (see Figure 1-43) and pull off the glove. Discard the glove into the designated receptacle.

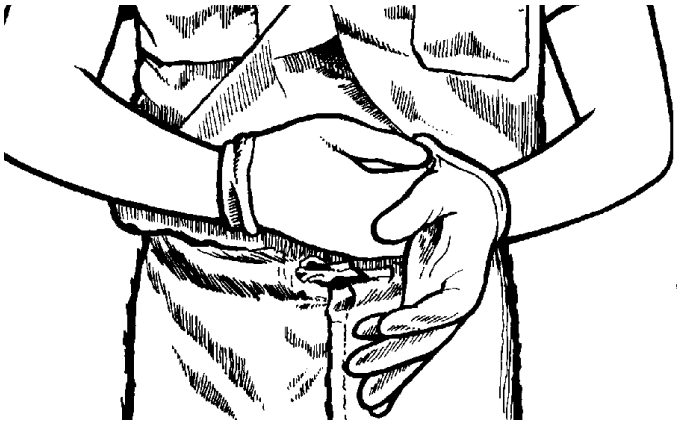

Figure 1-43. Technique for removing the first glove. The specialist must not allow the outer surface of the gloves to touch his bare skin.

d. Place the fingers inside the cuff of the glove "skin to skin" (see Figure 1-44); discard the glove.

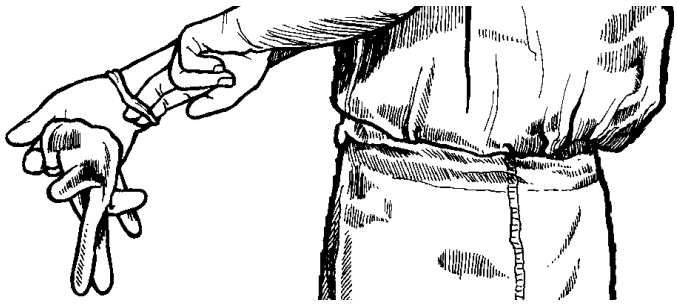

Figure 1-44. Removing the second glove. Note that the specialist touches only the "inside" surface of the glove with his bare hand.

e. After exiting the "sterile area," remove the mask and discard it into the proper receptacle.

Continue with Exercises

EXERCISES, LESSON 1

REQUIREMENT: The following exercises are to be answered by marking the lettered response that best answers the question, or by completing the incomplete statement, or by writing the answer in the space provided.

After you have completed all the exercises, turn to "Solutions to Exercises" at the end of the lesson and check your answers.

1. The surgical mask is worn primarily for the protection of the _____.

2. The surgical cap is worn to help:

   a. Keep blood off the specialist's hair.

   b. Keep hair out of the specialist's eyes.

   c. Prevent possible contamination of sterile field.

   d. Help prevent electrostatic sparks.

3. The scrub's shirt should be worn inside/outside the trousers.
   (circle one)

4. Before entering the restricted or semi-restricted areas of the surgical suite, the operating room specialist must put on a clean:

   a. Pair of gloves.

   b. Surgical gown.

   c. Scrub suit.

   d. Pair of socks.

5. You are scheduled to scrub on a particular day. That morning, you note a strange rash on your hands. You should:

    a. Call in sick.

    b. Say nothing.

    c. Report the rash to the surgeon.

    d. Report the rash to your supervisor.

6. Before donning a surgical gown, members of the surgical team are required to:

    a. Scrub their hands.

    b. Sterilize their hands and arms.

    c. Take a shower and shampoo their hair.

    d. Don rubber glove.

7. The mask should be changed after each procedure, more often if:

    a. You have a cold.

    b. The patient has a cold.

    c. The procedure is septic.

    d. It becomes damp.

8. When the mask is removed, it should be held by the:

    a. Nosepiece.

    b. Lower edge.

    c. Side edge.

    d. Ties and/or elastic headband.

9. Surgical detergents are conveniently released from containers by a _____.

   a. Push button.

   b. Hand-operated lever.

   c. Knee-operated lever.

   d. Foot-operated pedal.

10. Two types of surgical soaps that are available as standard items are: _____ and _____.

11. Surgical detergents will lather in _____ water.

   a. Hot.

   b. Cold.

   c. Hard.

   d. All of the above types of water.

12. When using the brush-stroke method to scrub hands, ___ circular strokes should be applied to all four sides of each finger.

   a. 20.

   b. 40.

   c. 50.

   d. 80.

13. If you touch the outside of your gown while putting it on, you should:

   a. Do nothing.

   b. Report to your supervisor.

   c. Discard the gown.

14. In removing gloves between cases, how is the second glove removed?

    a. Hold outer surface of the first glove "rubber to rubber" and pull off.

    b. Place your finger inside the cuff of the glove "skin to skin" and pull off.

15. Before removing your gown between cases, what should you do with your gloves?

    a. Remove and discard them.

    b. Remove and retain them.

    c. Wash them and keep them on.

    d. Keep them on.

16. Between procedures, the specialist must be able to remove his gown and _____ without contaminating his arms or hands.

    a. Change his shoes.

    b. Don a fresh mask.

    c. Put on a new scrub suit.

    d. Gloves.

17. Which of the following is/are advantageous in the use of the closed cuff method of gloving?

    a. Choices c and d below.

    b. No powder is needed.

    c. Gown cuffs can be anchored without contamination.

    d. Contamination of gloves from cuffs rolling on skin is eliminated.

18. Surgical gloves are packaged in pairs and in an _____.

FOR EXERCISES 19 THRU 27. Read each of the following statements carefully before making a mark. Some of the statements are true and some are false. Indicate the answer selected by placing a **"T" for true** and **"F" for false** in the blank space provided.

___ 19. The surgeon and his assistant are the only two members of the "sterile" team who are required to don sterile gown and gloves before touching sterile equipment.

___ 20. Each member of the surgical team puts on his own gown and gloves by himself.

___ 21. When gowning with the closed cuff method, you are to grasp the inside seam where the sleeve and cuff join.

___ 22. A scrub may be timed by the clock or by counting strokes.

___ 23. The same scrub procedure should be utilized every scrub, whether it is the first or last scrub of the day.

___ 24. Surgical scrub brushes are always reprocessed and used over.

___ 25. Military low quarter shoes are acceptable for surgical suited wear if shoe covers are placed over them.

___ 26. Since the scrub wears gown, gloves, and cap, it is really not important whether he bathes every day or not.

__ 27. Local policy is the final authority on the method employed for scrubbing the hands and arms.

Check Your Answers on Next Page

SOLUTIONS TO EXERCISES, LESSON 1

1. Patient. (para 1-9a)
2. c (para 1-8)
3. inside (para 1-6a)
4. c (para 1-6a)
5. d (para 1-3a)
6. a (para 1-1a)
7. d (para 1-9b)
8. d (para 1-9d)
9. d (para 1-10b)
10. Providone Iodine; Hibiclens (para 1-13a)
11. d (para 1-12b(4))
12. a (para 1-16b(7))
13. c (para 1-17a)
14. b (para 1-28c,d)
15. d (para 1-27b)
16. d (para 1-27a)
17. a (para 1-21a(1), (2))
18. Individual sterile wrapper (para 1-20a)
19. F (para 1-1a)
20. F (para 1-25)
21. T (para 1-18e)
22. T (para 1-14b(1),(2))

23. T (Table 1-1)

24. F (para 1-11)

25. T (para 1-7b)

26. F (para 1-3a)

27. T (para 1-1e)

End of Lesson

COMMENT SHEET

SUBCOURSE MD0933 Scrub, Gown, and Glove Procedures EDITION 100

Your comments about this subcourse are valuable and aid the writers in refining the subcourse and making it more usable. Please enter your comments in the space provided. ENCLOSE THIS FORM (OR A COPY) WITH YOUR ANSWER SHEET **ONLY** IF YOU HAVE COMMENTS ABOUT THIS SUBCOURSE..

FOR A WRITTEN REPLY, WRITE A SEPARATE LETTER AND INCLUDE SOCIAL SECURITY NUMBER, RETURN ADDRESS (and e-mail address, if possible), SUBCOURSE NUMBER AND EDITION, AND PARAGRAPH/EXERCISE/EXAMINATION ITEM NUMBER.

PLEASE COMPLETE THE FOLLOWING ITEMS:

(Use the reverse side of this sheet, if necessary.)

1. List any terms that were not defined properly.

2. List any errors.

paragraph	error	correction

3. List any suggestions you have to improve this subcourse.

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